

CHAPTER 4. PREPARING THE INSTALLATION SWMP -- STEP III

4.1 INTRODUCTION. The Solid Waste Management Plan (SWMP) provides centrally managed guidance on: procurement policy, collection and recycling operations, regulatory and Navy mandated compliance actions, minimization and diversion practices, revenues collected, educational programs, and disposal records.

SWMPs vary greatly, from detailed, as in the case of a Naval Shipyard that generates hundreds of tons of solid waste annually and performs the collection and disposal operations, to simple, as in the case of a communications station that generates much less solid waste annually. Though the two above plans will be substantially different in scope and size, both are of equal importance to the user.

A SWMP will provide the user with the information necessary to implement an efficient solid waste management program. This is done by sectioning the SWMP into specific components, each addressing a different aspect of the solid waste management program.

The SWMP should be updated every 3 years to reflect regulatory and Navy mandated requirements, and operations changes.

4.2 COMPONENTS OF A SOLID WASTE MANAGEMENT PLAN. The components as listed and defined below are recommended as a guide for developing a SWMP. This procedure will maintain consistency and provide uniformity. The volume and the array of waste types generated at an installation will dictate the SWMP's extent of detail. A solid waste characterization study is highly recommended for the installation even though it is not a SWMP component. Appendix A is a sample SWMP and is provided for basic reference purposes. Activities should expand on each section and incorporate applicable State and municipal requirements pertaining to Solid Waste Management.

4.2.1 SWMP Implementing Base Instruction. Implement the SWMP with an activity wide instruction, signed by the Commanding Officer. This endorsement will mandate compliance with the plan by the solid waste generators located at the activity. The base instruction should be the first thing the user reads, and should precede the SWMP introduction.

4.2.2 Introduction. The SWMP begins with a section explaining the purpose of the plan and by what authority it was developed. If the plan is implemented by a base instruction, the base instruction should precede this section. The governing federal, state, local, and Navy and Marine Corps regulations should be listed. See Appendix A, Section 1 and 2 of this guide.

4.2.3 Definitions. Appendix C lists solid waste types and Appendix H is a compilation of definitions often used in solid waste management.

4.2.4 Responsibilities. The responsibilities, authority, and accountability of all personnel involved in the solid waste management program are to be listed in this section. It will outline the employees' tasking and responsibilities, provide a basis for determining performance elements, job descriptions, and can be used as justification when requesting manpower. Develop an organizational chart showing solid waste management chain of command.

4.2.5 Collection and Disposal. The responsibility of each department involved in the existing collection and disposal of solid waste practices at the installation are to be listed in this section:

4.2.5.1 Contractors: A contractor is any private business or a local municipality. More than one contractor might be involved depending on solid waste specialty, restrictions, and recycled materials requirements. Refer to the installation's contract administrator for contract responsibilities, costs, and requirements. Contracts not requiring weight disposal information should be amended or changed during the next solicitation.

4.2.5.2 Public Works Department. Public works functions might be as simple as contract monitoring or as extensive as the collection, transportation, source recycling, and disposal responsibilities of all the installations/regions solid waste.

4.2.5.3 Morale, Welfare, and Recreation. MWR responsibilities are also contained in an existing base instruction. MWR is generally tasked with operating the Qualified Recycling Program (QRP) at Navy installations, maintaining revenue records and the Solid Waste Awareness Program.

4.2.5.4 Marine Installations. Unlike most Navy QRP operations, more than 95% of Marine Corps recycling operations are managed/operated by the Facilities or Environmental divisions.

4.2.5.5 Defense Reutilization and Marketing Office (DRMO). DRMO is responsible for the control and sale of government procured disposable property. (As mentioned in Section 3.4 of this document, the requirement that most recyclables be sold through the DRMO is under review).

4.2.5.6 Recycling Planning Board. Should be convened

4.2.6 Record Keeping. Record keeping will facilitate preparation of the SWARs, which has been a requirement since FY90. To determine solid waste requirements, each installation shall keep records of solid waste disposed and materials recycled. Records may be weight tickets, number and size of truckloads delivered, contractor billings, or any other means of accurately determining or establishing solid waste generation. Each installation shall also keep records of quantities of materials recycled on a weight basis, proceeds from the sale of recyclable materials, and avoided costs of disposal.

The FY Solid Waste Annual Report (SWAR) Guide and the Environmental Media Information Solid Waste System (EMI SW) are provided by NEESA annually to help the installation in collecting and preparing their SWAR. The EMI SW is especially useful in providing solid waste reports and graphics and tracking solid waste progress at the installation.

4.2.7 Source Reduction. Source reduction, the top priority for solid waste diversion from landfills, includes elimination, reuse, substitution, and use minimization of products to reduce the quantity of waste produced. Source reduction may be practiced at all levels (administrative, residential, and industrial) through selective buying patterns and reusing of products and materials.

4.2.7.1 Existing Practices. This section should include the purchasing and reuse of materials policy. The Supply Department is a primary information source. Determine existing policy on the reuse of wooden pallets and cardboard boxes, use of glass or ceramic cups and silverware instead of paper and plastic, any reuse of paper and xerox waste, green waste generation and reuse, use elimination of disposable products, and any other waste stream with source reduction potential.

4.2.7.2 Recommendations. Based on the findings of existing practices, this section shall list recommendations for reducing the waste stream in the administrative, residential, and industrial areas. Chapter 3 discusses source reduction methods for the various waste stream types. The recommendations should include actions that base personnel can perform in accomplishing source reduction. Simple changes in buying and usage practices can reduce solid waste generation.

4.2.8 Recycling. The second priority in diverting waste from a landfill is recycling. This section should include existing practices and recommendations for compliance as shown below.

4.2.8.1 Existing Practices. List in this section the responsible administrative parties for the QRP, including financial functions, and the collection, transportation, storage, sale, revenue, and record keeping, of all the marketable recyclable materials.

4.2.8.1.1 Qualified Recycling Program (QRP). A copy of the QRP instruction that defines the operation of the program should be made into an Appendix for reference purposes. List program personnel and their responsibilities in this section.

4.2.8.1.2 Financial. State the financial arrangements for sales, revenues, funds distribution, and records maintenance of funds and recyclable materials from the QRP.

4.2.8.2 Collection Practices of All Waste Stream Types. List in this section the current collection and recycling practices of all waste type material categories and sub-categories (see Table 2-3). For example, the paper category should discuss the five categories namely; cardboard, newspaper, high grade ledger, mixed, and non-recyclable paper.

4.2.8.3 Recommendations. This section consists of enumerating the recommendations beginning with the administrative operations and functions of the QRP and following with each waste type category and sub-category.

4.2.9 Energy Recovery. Energy Recovery is third on the Navy's priority list in the development of solid waste management plans. Incineration is the process that evolved from "dirty garbage burners" to "waste to energy" units generating electricity and possible steam. Incineration can reduce solid waste volume by 90 percent. Uncertain economic viability and public opposition due to combustion by-products have hindered waste to energy developments for resource recovery.

Waste to energy combustion by-products may pose a threat to public health. Pollutants of particular concern from incineration emissions are: acidic gasses, carbon monoxide, dioxin, and furans. The residue ash, which may contain heavy metals, is highly toxic and must be placed in Class 1 landfill. Future advances in efficiency and pollution control devices and increased costs for conventional energy sources will make waste to energy a viable disposal option.

Incineration is also the preferred method for disposing of medical and infectious waste. OPNAVINST 5090.1A defines infectious waste as that which contains pathogens with sufficient virulence and quantity so that exposure to the waste by a susceptible host could result in the transmission of an infectious disease.

4.2.9.1 Existing Practices. Discuss in this section any incineration practiced at the activity including classified material. Also include any existing or planned incinerator facilities in the vicinity of the activity operated by municipal or private entities.

4.2.9.2 Recommendations: Include in this section any economic benefits for an incineration plant. It is highly unlikely that a Navy owned waste to energy facility will be a cost effective option based on the high volume of solid waste required for plant operation plus environmental and capital cost concerns. Therefore, a cooperative effort with the local city, county and private development could be the sole option.

4.2.10 Composting. Composting, the fourth priority for an integrated solid waste management, is a biochemical process that reduces waste by degrading organic waste into humus. Waste volume reductions of as much as two thirds can be achieved with the final product used for soil conditioning. Mulching, an alternative to composting, is a process where chipped yard waste is spread over the ground to enrich the soil. Grass clippings, leaves, and other yard wastes can either be composted or mulched. Composting and mulching are methods of diverting green and organic waste from landfill disposal.

4.2.10.1 Existing Practices. Discuss in this section any composting or mulching practices at the activity. The Grounds Maintenance Contract is a source of information for specifying composting or mulching requirements on or off-base. Include in the discussion all green waste and yard clippings (golf course, housing, baseball field, etc.) and shredded/disintegrated paper sources.

4.2.10.2 Recommendations. Diversion of all green waste and yard clippings from landfill disposal should be the goal of any recommendation. The amount of any compostable material hauled off-base or diverted from the landfill should be recorded. Such information will be used to assess the impact of composting and mulching toward compliance with existing and future mandated diversion goals.

4.2.11 Landfill Disposal. Landfilling is the least desirable solid waste disposal option and ranks bottom on the priority list for integrated solid waste management. However, landfilling will remain a major disposal method until source reduction, recycling, incineration, and composting become predominant.

4.2.11.1 Existing Practices. List in this section all the entities (government and private) responsible for collecting, transporting, and disposing of all solid waste types. Include a discussion on the landfills used as to their type, restrictions, lifespan, and if any recycling/composting capability exists at the landfill. The entity or entities responsible for the record keeping function and SWAR preparation should also be discussed.

Any existing practices for the collection, transportation and sale of recyclable materials should have been discussed in the recycling section of this chapter. This section should be confined to data such as: the activity's landfill disposal tonnage records and associated costs, total solid waste generated, and percent diversion from landfilling.

This section should help facilitate compliance with requirements of OPNAVINST 5090.1A, Chapter 10, as well as those of MCO P5090.2.

4.2.11.2 Recommendations. List in this section any potential existing for better compliance with OPNAV Instruction in diverting solid waste from landfilling through source reduction, recycling, incineration, and composting techniques discussed earlier.

4.2.12 Education and Awareness. Education and awareness are vital for a successful solid waste management program. A properly implemented program will inform base personnel on how to participate in an integrated solid waste management plan. Increased awareness is achieved through base instructions (OPNAV, etc.), newspaper articles, special events, telephone, television, classes and workshops, radio, and container labeling.

4.2.12.1 Existing Practices. List in this section the entities or entities responsible for the education and awareness program. Discuss the methods used for informing base personnel of any ongoing recycling operations, incentives, and participation programs.

4.2.12.2 Recommendations. Chapter 2, Section 2.6 discusses several education and awareness methods that can be used. Discuss in this section the methods best suited for the subject activity.